



## Complete Summary

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### TITLE

Pneumonia: percent of patients age 50 years and older, hospitalized during October, November, December, January, February, or March who were screened for influenza vaccine status and were vaccinated prior to discharge, if indicated.

### SOURCE(S)

Specifications manual for national hospital inpatient quality measures, version 3.0b. Centers for Medicare & Medicaid Services (CMS), The Joint Commission; 2009 Oct. various p.

## Measure Domain

### PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

### SECONDARY MEASURE DOMAIN

Does not apply to this measure

## Brief Abstract

### DESCRIPTION

This measure is used to assess the percent of pneumonia patients age 50 years and older, hospitalized during October, November, December, January, February, or March who were screened for influenza vaccine status and were vaccinated prior to discharge, if indicated.

### RATIONALE

Influenza vaccination is indicated for people age 50 years and older because it is highly effective in preventing influenza-related pneumonia, hospitalization, and death. Vaccine coverage in the United States is suboptimal. Screening and vaccination of inpatients is recommended, but hospitalization is an underutilized opportunity to provide vaccination to adults.

## PRIMARY CLINICAL COMPONENT

Pneumonia; influenza vaccination

## DENOMINATOR DESCRIPTION

Pneumonia patients 50 years of age and older who were discharged during October, November, December, January, February, or March (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

## NUMERATOR DESCRIPTION

Patients discharged during October, November, December, January, February, or March with pneumonia, age 50 and older, who were screened for influenza vaccine status and were vaccinated prior to discharge, if indicated

### Evidence Supporting the Measure

#### EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

#### NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [Infectious Diseases Society of America/American Thoracic Society consensus guidelines on the management of community-acquired pneumonia in adults.](#)

### Evidence Supporting Need for the Measure

#### NEED FOR THE MEASURE

Overall poor quality for the performance measured  
Use of this measure to improve performance

#### EVIDENCE SUPPORTING NEED FOR THE MEASURE

Atkinson WL, Pickering LK, Schwartz B, Weniger BG, Iskander JK, Watson JC. General recommendations on immunization. Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the American Academy of Family Physicians (AAFP). MMWR Recomm Rep 2002 Feb 8;51(RR-2):1-35. [PubMed](#)

Fedson DS, Houck P, Bratzler D. Hospital-based influenza and pneumococcal vaccination: Sutton's Law applied to prevention. Infect Control Hosp Epidemiol 2000 Nov;21(11):692-9. [70 references] [PubMed](#)

Kissam S, Gifford DR, Patry G, Bratzler DW. Is signed consent for influenza or pneumococcal polysaccharide vaccination required?. Arch Intern Med 2004 Jan 12;164(1):13-6. [PubMed](#)

Mandell LA, Wunderink RG, Anzueto A, Bartlett JG, Campbell GD, Dean NC, Dowell SF, File TM Jr, Musher DM, Niederman MS, Torres A, Whitney CG. Infectious Diseases Society of America/American Thoracic Society consensus guidelines on the management of community-acquired pneumonia in adults. Clin Infect Dis 2007 Mar 1;44 Suppl 2:S27-72. [335 references] [PubMed](#)

## State of Use of the Measure

### STATE OF USE

Current routine use

### CURRENT USE

Accreditation  
Collaborative inter-organizational quality improvement  
External oversight/Medicaid  
External oversight/Medicare  
Internal quality improvement  
National reporting  
Pay-for-performance

## Application of Measure in its Current Use

### CARE SETTING

Hospitals

### PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Measure is not provider specific

### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

### TARGET POPULATION AGE

Age greater than or equal to 50 years

### TARGET POPULATION GENDER

Either male or female

### STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

## Characteristics of the Primary Clinical Component

### **INCIDENCE/PREVALENCE**

In 2004, 60,207 people died of pneumonia. There were an estimated 651,000 hospital discharges in males (44.9 per 10,000) and 717,000 discharges in females (47.7 per 10,000) all attributable to pneumonia in 2005. The highest pneumonia discharge rate that year was seen in those 65 and over at 221.3 per 10,000.

### **EVIDENCE FOR INCIDENCE/PREVALENCE**

National Center for Health Statistics. National hospital discharge survey, 1988, 2004 and 2005 [unpublished].

National Center for Health Statistics. Report of final mortality statistics, 1979-2003. National vital statistics report, preliminary data for 2004. Hyattsville (MD): National Center for Health Statistics;

### **ASSOCIATION WITH VULNERABLE POPULATIONS**

Many investigators have found substantial racial disparities in vaccination rates for minority populations. African American and Native American patients have the lowest rates of influenza vaccination. This disparity largely reflects differences in ambulatory vaccination rates. Lack of access to primary care, limited awareness of need for vaccination, and misconceptions about vaccination have been implicated as possible reasons for racial disparity in immunization rates. This suggests that hospitalization may be a particularly opportune time to vaccinate minority patients.

See also the "Burden of Illness" field.

### **EVIDENCE FOR ASSOCIATION WITH VULNERABLE POPULATIONS**

Bratzler DW, Houck PM, Jiang H, Nsa W, Shook C, Moore L, Red L. Failure to vaccinate Medicare inpatients: a missed opportunity. Arch Intern Med 2002 Nov 11;162(20):2349-56. [PubMed](#)

### **BURDEN OF ILLNESS**

In the United States (U.S.) pneumonia is the sixth most common cause of death. From 1979-1994, the overall rates of death due to pneumonia and influenza increased by 59%. Much of this increase is due to a greater population of persons aged 65 years or older, and a changing epidemiology of pneumonia, including a greater proportion of the population with underlying medical conditions at increased risk of respiratory infection.

Influenza and pneumococcal vaccines are underutilized for Americans aged 65 years and older. Based on the 1999 Behavioral Risk Factor Surveillance System

(BRFSS) survey, 66.9% received the influenza vaccine during the previous 12 months and 54.1% had ever received the pneumococcal vaccine. This underutilization is not without consequences. Influenza causes more than 100,000 excess hospitalizations and 20,000 deaths each year. Infection due to *Streptococcus pneumoniae* accounts for at least 500,000 cases of pneumonia and 50,000 cases of bacteremia in the United States each year. The combined reporting category of influenza and pneumonia represents the fifth leading cause of death for this age group.

See also the "Incidence/Prevalence" field.

## **EVIDENCE FOR BURDEN OF ILLNESS**

Bartlett JG, Dowell SF, Mandell LA, File Jr TM, Musher DM, Fine MJ. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. Clin Infect Dis2000 Aug;31(2):347-82. [218 references] [PubMed](#)

Bratzler DW, Houck PM, Jiang H, Nsa W, Shook C, Moore L, Red L. Failure to vaccinate Medicare inpatients: a missed opportunity. Arch Intern Med2002 Nov 11;162(20):2349-56. [PubMed](#)

Influenza and pneumococcal vaccination levels among persons aged > or = 65 years--United States, 1999. MMWR Morb Mortal Wkly Rep2001 Jun 29;50(25):532-7. [PubMed](#)

## **UTILIZATION**

Annually, 2-3 million cases of community acquired pneumonia result in 10 million physician visits, 500,000 hospitalizations, and 45,000 deaths.

There are more than 1.1 million hospitalizations due to pneumonia each year in the U.S.

See also the "Incidence/Prevalence" field.

## **EVIDENCE FOR UTILIZATION**

Bartlett JG, Dowell SF, Mandell LA, File Jr TM, Musher DM, Fine MJ. Practice guidelines for the management of community-acquired pneumonia in adults. Infectious Diseases Society of America. Clin Infect Dis2000 Aug;31(2):347-82. [218 references] [PubMed](#)

Niederman MS, Mandell LA, Anzueto A, Bass JB, Broughton WA, Campbell GD, Dean N, File T, Fine MJ, Gross PA, Martinez F, Marrie TJ, Plouffe JF, Ramirez J, Sarosi GA, Torres A, Wilson R, Yu VL. Guidelines for the management of adults with community-acquired pneumonia. Diagnosis, assessment of severity, antimicrobial therapy, and prevention. Am J Respir Crit Care Med2001 Jun;163(7):1730-54. [PubMed](#)

## **COSTS**

Unspecified

## Institute of Medicine National Healthcare Quality Report Categories

### IOM CARE NEED

Staying Healthy

### IOM DOMAIN

Effectiveness

## Data Collection for the Measure

### CASE FINDING

Users of care only

### DESCRIPTION OF CASE FINDING

Discharges, 50 years of age and older, with a principal diagnosis of pneumonia *or* a principal diagnosis of septicemia or respiratory failure (acute or chronic) *and* other diagnosis code of pneumonia who were discharged during October, November, December, January, February, or March

### DENOMINATOR SAMPLING FRAME

Patients associated with provider

### DENOMINATOR INCLUSIONS/EXCLUSIONS

#### Inclusions

Discharges with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) Principal Diagnosis Code of pneumonia as defined in the appendices of the original measure documentation *or* ICD-9-CM Principal Diagnosis Code of septicemia or respiratory failure (acute or chronic) as defined in the appendices of the original measure documentation *and* an ICD-9-CM Other Diagnosis Code of pneumonia as defined in the appendices of the original measure documentation who are 50 years of age and older who were discharged during October, November, December, January, February, or March

#### Exclusions

- Patients less than 50 years of age
- Patients who have a Length of Stay (LOS) greater than 120 days
- Patients with Cystic Fibrosis (as defined in the appendices of the original measure documentation)
- Patients who had no chest x-ray or computed tomography (CT) scan that indicated abnormal findings within 24 hours prior to hospital arrival or anytime during this hospitalization

- Patients with *Comfort Measures Only* documented
- Patients enrolled in clinical trials
- Patients with a secondary diagnosis of 487.0 (influenza with pneumonia)
- Patients discharged/transferred to another hospital for inpatient care
- Patients who left against medical advice or discontinued care
- Patients who expired
- Patients discharged/transferred to a federal health care facility
- Patients discharged/transferred to hospice

## **RELATIONSHIP OF DENOMINATOR TO NUMERATOR**

All cases in the denominator are equally eligible to appear in the numerator

## **DENOMINATOR (INDEX) EVENT**

Clinical Condition  
Institutionalization

## **DENOMINATOR TIME WINDOW**

Time window brackets index event

## **NUMERATOR INCLUSIONS/EXCLUSIONS**

### **Inclusions**

Patients discharged during October, November, December, January, February, or March with pneumonia, age 50 and older, who were screened for influenza vaccine status and were vaccinated prior to discharge, if indicated

### **Exclusions**

None

## **MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS**

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

## **NUMERATOR TIME WINDOW**

Institutionalization

## **DATA SOURCE**

Administrative data  
Medical record

## **LEVEL OF DETERMINATION OF QUALITY**

Individual Case

#### **PRE-EXISTING INSTRUMENT USED**

Unspecified

#### **Computation of the Measure**

#### **SCORING**

Rate

#### **INTERPRETATION OF SCORE**

Better quality is associated with a higher score

#### **ALLOWANCE FOR PATIENT FACTORS**

Unspecified

#### **STANDARD OF COMPARISON**

External comparison at a point in time  
External comparison of time trends  
Internal time comparison

#### **Evaluation of Measure Properties**

#### **EXTENT OF MEASURE TESTING**

This measure has been used by the Centers for Medicare & Medicaid Services (CMS) as a Core Measure for public reporting since 2004. Each year CMS compares a certain percentage of reported cases using inter-rater reliability testing.

#### **EVIDENCE FOR RELIABILITY/VALIDITY TESTING**

Reporting hospital quality data for annual payment update (RHQDAPU). [internet]. Baltimore (MD): Centers for Medicare & Medicaid Services; [accessed 2010 May 10]. [1 p].

#### **Identifying Information**

#### **ORIGINAL TITLE**

PN-7: influenza vaccination.

#### **MEASURE COLLECTION**



**MEASURE SET NAME**

[Pneumonia](#)

**SUBMITTER**

Centers for Medicare & Medicaid Services  
Joint Commission, The

**DEVELOPER**

Centers for Medicare & Medicaid Services/The Joint Commission

**FUNDING SOURCE(S)**

All external funding for measure development has been received and used in full compliance with The Joint Commission's Corporate Sponsorship policies, which are available upon written request to The Joint Commission.

**COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE**

The measure was developed and continues to be maintained in conjunction with a multi-disciplinary Technical Expert Panel.

**FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST**

Expert panel members have made full disclosure of relevant financial and conflict of interest information in accordance with the Joint Commission's Conflict of Interest policies, copies of which are available upon written request to The Joint Commission.

**ENDORSER**

National Quality Forum

**INCLUDED IN**

Hospital Compare  
Hospital Quality Alliance  
National Healthcare Disparities Report (NHDR)  
National Healthcare Quality Report (NHQR)

**ADAPTATION**

Measure was not adapted from another source.

**RELEASE DATE**

2000 Aug

## **REVISION DATE**

2009 Oct

## **MEASURE STATUS**

This is the current release of the measure.

This measure updates a previous version: Specifications manual for national hospital quality measures, version 2.5b. Centers for Medicare & Medicaid Services (CMS), The Joint Commission; 2008Oct. various p.

## **SOURCE(S)**

Specifications manual for national hospital inpatient quality measures, version 3.0b. Centers for Medicare & Medicaid Services (CMS), The Joint Commission; 2009 Oct. various p.

## **MEASURE AVAILABILITY**

The individual measure, "PN-7: Influenza Vaccination," is published in "Specifications Manual for National Hospital Inpatient Quality Measures." This document is available from [The Joint Commission Web site](#). Information is also available from the [Centers for Medicare & Medicaid Services \(CMS\) Web site](#). Check The Joint Commission Web site and CMS Web site regularly for the most recent version of the specifications manual and for the applicable dates of discharge.

## **COMPANION DOCUMENTS**

The following are available:

- A software application designed for the collection and analysis of quality improvement data, the CMS Abstraction and Reporting Tool (CART), is available from the [CMS CART Web site](#). Supporting documentation is also available. For more information, e-mail CMS PROINQUIRIES at [proinquiries@cms.hhs.gov](mailto:proinquiries@cms.hhs.gov).
- The Joint Commission. A comprehensive review of development and testing for national implementation of hospital core measures. Oakbrook Terrace (IL): The Joint Commission; 40 p. This document is available from [The Joint Commission Web site](#).
- The Joint Commission. Attributes of core performance measures and associated evaluation criteria. Oakbrook Terrace (IL): The Joint Commission; 5 p. This document is available from [The Joint Commission Web site](#).
- Hospital compare: a quality tool provided by Medicare. [internet]. Washington (DC): U.S. Department of Health and Human Services; 2009 Oct 5; [accessed 2009 Oct 12]. This is available from the [Medicare Web site](#). See the related [QualityTools](#) summary.

## **NQMC STATUS**

This NQMC summary was originally completed by ECRI on January 6, 2003. This NQMC summary was updated by ECRI Institute on October 24, 2005, April 10, 2007, and on October 26, 2007. The Joint Commission informed NQMC that this measure was updated on August 29, 2008 and provided an updated version of the NQMC summary. This NQMC summary was updated accordingly by ECRI Institute on November 11, 2008. The information was verified by the Centers for Medicare & Medicaid Services on January 22, 2009. The Joint Commission informed NQMC that this measure was updated again on October 1, 2009 and provided an updated version of the NQMC summary. This NQMC summary was updated accordingly by ECRI Institute on December 2, 2009. The information was verified by the Centers for Medicare & Medicaid Services on April 27, 2010.

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